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Aquatic Monocotyledons of Iowa

By ERNEST O. BEAL

During 1951 and 1952 a study of 116 species of aquatic monocotyledons was made, primarily from specimens in the herbaria of Iowa State College and the State University of Iowa. The selection of aquatic species was based, for the most part, upon those listed by Muenscher (1944) and from data on herbarium specimens as well as from limited personal field experience.

Of the 14 families included, the Gramineae, with 17 species distributed in 11 genera, and the Cyperaceae, with 34 species in 7 genera are the best represented. *Potamogeton*, with 18 species is the largest of the 42 genera studied, *Eleocharis* and *Scirpus*, both of the Cyperaceae, being second and third in size, with 12 and 11 species respectively.

Dot distribution maps prepared in the course of this study (Beal 1952) illustrate well several remarkable natural distribution patterns within the state. Several species, *Typha latifolia*, *Potamogeton nodosus*, *Alisma subcordatum*, *Spartina pectinata*, *Scirpus atrovirens* and *Juncus torreyi*, to mention a few, occur throughout the state. *Elodea canadensis*, although primarily known from the "Lakes Region", is widely distributed throughout the northern half of the state. *Typha angustifolia*, formerly unknown from the southern four tiers of counties, has been found by M. J. Fay in several counties in southwestern Iowa. *Potamogeton friesii*, *P. gramineus*, *P. praelongus*, *P. strictifolius*, *Triglochin maritima*, *T. palustris*, *Beckmannia syzigachne*, *Calamagrostis inexpansa*, *Glyceria borealis*, *Scolochloa festucacea*, *Eriophorum gracile* and *Rhynchospora capillacea* are known to occur rather frequently, although often locally, in the more recently glaciated areas of northern Iowa, particularly in the "Lakes Region". *Leersia lenticularis* is known from scattered localities throughout eastern Iowa, as are *Symplocarpus foetidus* and *Juncus canadensis*. *Pontederia cordata* occurs quite abundantly in the southeastern part of the state.

Numerous rare aquatic species occur in various portions of the state. *Potamogeton crispus*, an introduced European species, has been collected from the Mississippi River near the State Fisheries in Allamakee County by Snead in 1944. *Scheuchzeria palustris*, *Sagittaria cristata*, *Carex limosa* and *Eleocharis wolfii* have been collected from bogs and sloughs in Emmet County by Cratty in the

latter part of the 19th century and have not been collected from there since then. These stations may well have since been destroyed. *Eleocharis wolfii*, however, has recently been collected in Cedar County by M. J. Fay (1952) and more recently in Union County. *Eleocharis pauciflora*, listed as *Scirpus pauciflorus* by Wolden (1933), and *Scleria verticillata* have been more recently collected from a bog northwest of Estherville in Emmet County by Wolden. *Eleocharis parvula* has been collected in Palo Alto and Clay counties by A. Hayden. *Scirpus paludosus* has been collected in Palo Alto County by A. Hayden. M. L. Grant (1951) has reported it as occurring in Dickinson County. *Juncus alpinus* has been collected by B. Shimek near Blair Bridge in Harrison County. More recently it has been collected from the Silver Lake Fen in Dickinson County. In this location it occurs with *Juncus nodosus* and a form that appears to be a hybrid between the two. This cross has been reported as occurring in Newfoundland and in Gaspé County, Quebec by Fernald (1950) and has been termed *X J. nodosiformis*. In 1912, G. Berry collected *Calla palustris* from a swamp on Abby Creek near Bertram and *Orontium aquaticum* from a prairie pond 3 miles from Troy Mills. The occurrence of these two plants, the former typically "boreal" and the latter "austral", in Linn County is indeed remarkable. *Alisma gramineum* has been collected from the Chain Lakes in Linn County by S. Pattee in 1948 and is not known to occur elsewhere in the state. *Juncus marginatus* is known to occur in two southeastern counties. It has been collected in Muscatine County by F. Reppert in 1892 and in Cedar County by M. J. Fay in 1950. *Eleocharis olivacea*, an eastern species, was collected from Swan Lake in Johnson County by R. F. Thorne in 1950. No other station within the state is known for this species. *Heteranthera reniformis* has been collected within the state only from Red-Haw Hill Reservoir by M. Lewis in 1948. Considering its location, this may well be an introduced species. A close relative, *H. limosa* is known from only two stations within the state, one in Muscatine the other in Freemont County.

Sagittaria brevirostra, with a stout, obliquely ascending beak, was found to be consistently confused with *S. latifolia*. Both species are widely distributed throughout the state.

Gilly (1946) has reported the occurrence of *Eleocharis atropurpurea* in Muscatine and Jefferson counties, and *Scirpus torreyi* in Clinton County. *Scirpus hallii*, as *S. supinus* var. *hallii*, has been reported by W. D. Barnes, F. Reppert and Miller (1901) in the flora of Scott and Muscatine counties. No specimens of these

species are known to exist in Iowa at the present time. It is possible, however, that these species may again be found.

Since portions of Iowa, such as the "Lakes Region" in the northwest and the Muscatine Slough region in the southeast, have received much botanical attention in relation to some other areas, it is expected that future distributional data will add many new stations for the above mentioned species.

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